

REMARKS

Claims 26-42 and 44-48 are pending in this application. By this Amendment, claim 44 is amended and claims 47 and 48 are added. No new matter is added by these amendments. Reconsideration of the application based on the above amendments and the following remarks is respectfully requested.

The Applicants appreciate the indication of allowable subject matter in claims 26-42.

The Office Action rejects claims 44-46 under 35 U.S.C. §103(a) over U.S. Patent No. 4,939,678 to Beckworth Jr. in view of U.S. Patent No. 5,739,907 to Chen. The rejection is respectfully traversed.

Independent claim 44 recites adjusting automatically at least one of a position of the transmitter unit and a movement vector of the second body in response to feedback from the determined position of the light beam on the detector in order to maintain the light beam on the detector during relative movement of the first and second bodies, and measuring the deviation at least in part from the adjustment of the at least one of the position of the transmitter unit and the movement vector of the second body.

The Office Action, on page 2, admits that Beckworth fails to disclose the above-mentioned features.

Instead, the Office Action asserts that Chen at column 3, lines 3-30 discloses the above-mentioned features. Applicants respectfully disagree.

Chen discloses a laser interference interferometer system for measuring linear displacement (i.e., the distance between two objects). As described in the background section, it can be important in such systems that the optical components are aligned for laser power reasons (see column 1, lines 32-34) and Chen appears to achieve this by monitoring the position of a beam on a photodiode during relative motion between the optical components and taking corrective action to ensure alignment (column 3, lines 3-57). However, it is not

clear that Chen discloses measuring any deviation of the moving bodies by looking at how their motion is adjusted.

It would not have been obvious to one of ordinary skill in the art to modify Chen so as to measure the corrective action or adjustment in order to measure deviation. Chen is primarily concerned with laser interferometers having automatic laser path alignment (see the Abstract, column 1, lines 5-9 and column 1, lines 59-62). This is achieved by a feedback loop (column 3, lines 32-57). Chen does not appear to suggest that it is necessary or advantageous to record the adjustment made to maintain alignment. Accordingly, there seems to be no reasonable suggestion for recording the adjustment. The recording would require further complication and resource requirements that Chen does not reasonably suggest to one of ordinary skill in the art.

Furthermore, at Chen's column 1, lines 40-46 and column 3, line 60 - column 4, line 2, Chen appears to describe methods of measuring deviations such as straightness that are different than the claimed method in independent claim 44. Chen's describes measuring deviation (i.e., straightness) using different sets of lenses, or from combined diagonal measurements. Accordingly, Chen appears to teach away from measuring deviation by measuring the corrective action or adjustment as recited in claim 44.

Moreover, it would not be obvious to modify Beckworth with Chen, because Chen describes measuring deviation using different sets of lenses, or from combined diagonal measurements. Accordingly, a combination of the teachings of Chen and Beckworth would not arise at the claimed invention. Rather, further modification that is not taught or suggested in Chen is still needed and that is to modify the system to record the measurement and then use that recording as a basis for measuring deviation.

Therefore, a combination of Beckworth and Chen fails to disclose the above-identified features of independent claim 44 and fails to achieve the advantages that enable measurement


of deviation beyond the range of the detector itself. Furthermore, the combination of Chen and Beckworth also fails to accomplish a system that could be configured such that the beam is maintained on a certain region of the detector or even only on one spot of the detector. This is advantageous in that it can mean that only that the region/spot of the detector needs to be calibrated and/or the most sensitive/accurate part of the detector can be used.

Accordingly, Applicants respectfully request that the rejection be withdrawn.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:
Petition For Extension of Time

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